

REMARKS

Claims 1-42 are now pending in the application. Claims 1 and 21 are amended. Support for the amendments can be found in the originally filed specification at paragraph [0025] with paragraph [0004] and at Figure 6. For example, in Figure 6, the first speaker on the high quality channel is employed as a reference speaker for the second speaker on the low quality channel, but the second speaker on the low quality channel is not employed as a reference speaker for the first speaker on the high quality channel. Claims 41 and 42 are added. Support for the addition can be found in the originally filed specification at paragraph [0023]. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

REJECTION UNDER 35 U.S.C. § 102

Claims 1-2, 4, 21-22, and 24 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Chandler et al. (U.S. Pat. No. 6,477,491). This rejection is respectfully traversed.

The Examiner relies on Chandler et al. to teach generating a transcription of temporarily aligned, tagged dialogue turns of multiple speakers by performing speaker dependent voice recognition and using microphones dedicated to specific speakers. But Chandler et al. teach toward using different software programs to recognize user speech by differentiating between the speakers based on the dedicated microphones. There is no teaching that the automatic speech recognition result of one speaker is used to improve automatic speech recognition of another speaker. Alternatively, even though it is unclear how the Examiner interprets Chandler et al. to teach using

interaction with a reference speaker to improve automatic recognition of speech of another speaker, it can also be said that Chandler et al., if a reference speaker exists, must teach towards using each of the speakers as a reference speaker for any other speaker with whom they interact. In other words, Chandler et al. teach away from preferentially employing one of the speakers as the reference speaker.

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve automatic recognition of speech of the caller. For example, independent claims 1 and 21, especially as amended, recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, Chandler et al. teach away from the subject matter recited in claims 1 and 21.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 1 and 21 under 35 U.S.C. § 102(e), along with rejection on these grounds of all claims dependent therefrom. Applicants respectfully note that new claims 41 and 42 depend from claim 1 and should be allowed for the same reasons.

Claims 1-2, 4, 11, 21-22, and 24, and 31 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ortega et al. (U.S. Pat. No. 6,332,122). This rejection is respectfully traversed.

The Examiner relies on Ortega et al. to teach recognizing speakers using a single microphone, tagging their speech by speaker identity when creating a transcript, and switching speech recognition models when a change in speaker identity is

detected. The Examiner also insists that Ortega et al. teach improving speech of one speaker by interaction with a reference speaker at the Abstract and columns 3 and 4. But Ortega et al. merely teach that speaker dependent recognition models can be used when the speaker is known, and that speaker independent speech recognition models can be used when the speaker is unknown. There is no teaching that the automatic speech recognition result of one speaker is used to improve automatic speech recognition of another speaker. Alternatively, even though it is unclear how the Examiner interprets Ortega et al. to teach using interaction with a reference speaker to improve automatic recognition of speech of another speaker, it can also be said that Ortega et al., if a reference speaker exists, must teach towards using each of the speakers as a reference speaker for any other speaker with whom they interact. In other words, Ortega et al. teach away from preferentially employing one of the speakers as the reference speaker.

The Examiner also insists that Ortega et al. teach employing context from a reference speaker in a focused language model used to recognize speech of another speaker. But the term "language models" is a well known term of art, and the Examiner continues to fail to accord the term "language models" its appropriate meaning. Ortega et al. do not teach use of language models at all. Additionally, as explained above, Ortega et al. do not teach using interaction with a reference speaker to improve automatic recognition of speech of another speaker. In other words, Ortega et al. teach away from using context extracted from automatic speech recognition results of the reference speaker as context in a language model utilized to assist in recognizing speech of the second speaker.

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve automatic recognition of speech of the caller. For example, independent claims 1 and 21, especially as amended, recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, Ortega et al. teach away from the subject matter recited in claims 1 and 21.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 1 and 21 under 35 U.S.C. § 102(b), along with rejection on these grounds of all claims dependent therefrom. Applicants respectfully note that new claims 41 and 42 depend from claim 1 and should be allowed for the same reasons.

REJECTION UNDER 35 U.S.C. § 103

Claims 3, 5, 23, and 25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of Skerpac (U.S. Pat. App. Pub. No. 2002/0104027). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on Skerpac at paragraph [0050] to teach a biometric security system in which training speech is obtained with a high quality microphone so that this "reference speech" can later be used to verify identity of the same speaker supplying speech by a lower quality microphone. However, paragraph [0050] actually teaches

towards ensuring that all channels are of high quality. Therefore, Skerpac teaches away from employing a low quality channel for one of the speakers; and Skerpac further teaches away from preferentially employing the speaker on a high quality channel as a reference speaker for improving speech recognition of the speaker on a low quality channel. The teachings of Chandler et al. and Skerpac must be taken in combination as whole; if one of the references teaches away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. "A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect 'taught away' from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Additionally, speaker verification is a wholly different operation than speech recognition, and the use of the reference is respectfully challenged as not being directed toward the art of speech recognition; the speaker model developed by Skerpac is not used to recognize speech of the speaker at a later time. Also, the speaker according to the teachings of Skerpac is the same person, so Skerpac cannot fairly be viewed as contemplating preferentially employing speech recognition results of a first speaker to

improve recognition of speech of a second speaker *interacting with* the first speaker. Therefore, Skerpac teaches away from the first and second speaker being two different speakers; Skerpac also teaches away from employing a low quality channel for one of the speakers; and Skerpac further teaches away from preferentially employing the speaker on a high quality channel as a reference speaker for improving speech recognition of the speaker on a low quality channel. As a result, Chandler et al. and Skerpac, taken in combination as a whole, teach away from preferentially employing the speaker on a high quality channel as a reference speaker for improving speech recognition of the speaker on a low quality channel.

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, the teachings of Chandler et al. and Skerpac, taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 3, 5, 23, and 25 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

Claims 6-7, 9-10, 26-27, and 29-30 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of Arnold et al. (U.S. Pat. App. Pub. No. 2003/0182131). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on Arnold et al. to teach selecting a topic and employing a language model based on the topic to allow the user to carry out informational and transaction tasks. However, the conversation in Arnold et al. occurs between the user and a distributed system. Of note, the language model is selected by the user to recognize speech of the user. Accordingly, it is contrary to the teachings of Arnold et al. for a topic extracted from speech of the user to be used to select a language model for recognizing speech the distributed system. In other words, the user cannot be a reference speaker for the distributed system. Also, it is contrary to the teachings of Arnold et al. for a topic extracted from speech of the distributed system to be used to select a language model for recognizing speech of the user. Arnold et al. teach away from having a reference speaker at all. The teachings of Chandler et al. and Arnold et al. must be taken in combination as whole; if one of the references teaches away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. "A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect 'taught away' from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc.*

v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, the teachings of Chandler et al. and Arnold et al., taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 6-7, 9-10, 26-27, and 29-30 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

Claims 8 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of Arnold et al. (U.S. Pat. App. Pub. No. 2003/0182131) and Suhm et al. (U.S. Pat. No. 6,823,054). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al. and Arnold et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on Suhm et al. to teach prompting a caller to select a topic by pressing a button on a telephone keypad. However, the teachings of Chandler et al., Arnold et al., and Suhm et al., must be taken in combination as whole; if one of the references teaches away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. “A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect ‘taught away’ from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant.” *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Applicants’ claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, “improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker.” Thus, Chandler et al., Arnold et al., and Suhm et al., taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 8 and 28 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

Claims 12 and 32 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of De Bellis et al. (U.S. Pat. No. 6,823,054). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on De Bellis et al. at column 15, line 60-column 16, line 4 to teach supplementing a constraint list for recognizing speech of one speaker based on speech recognition results extracted from speech of another speaker preferentially employed as a reference speaker. However, the conversation in De Bellis et al. occurs between the user and an automated search system. Of note, there is not speech recognition result for speech of the automated search system; the constraint is used to recognize speech of the user, who is the only speaker. Accordingly, it is contrary to the teachings of De Bellis et al. for keywords extracted from speech of the user to be used for recognizing speech of the automated search system. In other words, the user cannot be a reference speaker for the automated search system. Also, it is contrary to the teachings of De Bellis et al. for keywords extracted from speech of the automated search system to be used for recognizing speech of the user. De Bellis et al. teach away from having a reference speaker at all. The teachings of Chandler et al. and De Bellis et al. must be taken in combination as whole; if one of the references teaches

away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. "A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect 'taught away' from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, Chandler et al. and De Bellis et al., taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 12 and 32 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

Claims 13 and 33 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of Basson et al. (U.S. Pat. No. 6,996,526). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on Basson et al. to teach supplementing a constraint list for recognizing speech of one speaker based on speech recognition results extracted from speech of another speaker preferentially employed as a reference speaker. However, if Basson et al. teach using keywords extracted from speech of a reference speaker to recognize speech of another speaker at columns 4 and 5, then it must also be true that Basson et al. at columns 4 and 5 teach that each speaker is a reference speaker for each other speaker. Therefore, Basson et al. teach away from improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker. The teachings of Chandler et al. and Basson et al. must be taken in combination as whole; if one of the references teaches away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. "A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect 'taught away' from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered

in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, Chandler et al. and Basson et al., taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 13 and 33 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

Claims 14-15 and 34-35 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of Boguraev et al. (U.S. Pat. No. 6,996,526). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on Boguraev et al. to teach a speech recognition system performing interruption detection and using the interruption as input to a language

model used to assist in recognizing speech of the reference speaker. However, Bogeraev et al. at column 2 teaches that using a language model is likely to fail in the presence of interruptions. Thus, Bogeraev et al. teach away from employing interruptions as context in a language model. Also, columns 3 and 4 teach selecting high selectivity terms as salient terms for indexing the recording so that users can select a salient term to begin playback of the document at the point at which the salient term appears in the document. These salient terms are not used to improve speech recognition of speech of any speakers in the transcripts. Also, these salient terms are not interruptions. Therefore, Boguraev et al. teach away from improving automatic recognition of speech of a second speaker based on interaction, such as interruption, of the second speaker with a first speaker preferentially employed as a reference speaker. The teachings of Chandler et al. and Boguraev et al. must be taken in combination as whole; if one of the references teaches away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. "A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect 'taught away' from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, Chandler et al. and Boguraev et al., taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 14-15 and 34-35 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

Claims 8 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chandler et al. (U.S. Pat. No. 6,477,491) in view of Arnold et al. (U.S. Pat. App. Pub. No. 2003/0182131) and Suhm et al. (U.S. Pat. No. 6,823,054). This rejection is respectfully traversed.

For discussion of significant differences between Applicants' claimed invention and the teachings of Chandler et al., Applicants respectfully direct the Examiner's attention to remarks detailed above with respect to rejection of the independent claims.

The Examiner relies on Suhm et al. to teach extracting keywords, frustration phrases, polity expressions, and topic, complaint, solution, and/or resolution context, and record these data as mined speech data. However, the teachings of Chandler et al.

and Suhm et al. must be taken in combination as whole; if one of the references teaches away from the claimed invention, the combination of the references must necessarily teach away from the claimed invention. "A *prima facie* case of obviousness can be rebutted if the applicant...can show that the art in any material respect 'taught away' from the claimed invention...A reference may be said to teach away when a person of ordinary skill, upon reading the reference...would be led in a direction divergent from the path that was taken by the applicant." *In re Haruna*, 249 F.3d 1327, 58USPQ2d 1517 (Fed. Cir. 2001). A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984). It is improper to combine references where the references teach away from their combination. *In re Grasselli*, 713 F.2d 731, 743, 218 USPQ 769, 779 (Fed. Cir. 1983).

Applicants' claimed invention is directed toward using interaction between a caller and agent preferentially employed as a reference speaker to improve recognition of speech of the caller. For example, independent claims 1 and 21 recite, "improving automatic recognition of speech of a second speaker based on interaction of the second speaker with a first speaker preferentially employed as a reference speaker." Thus, Chandler et al. and Suhm et al., taken in combination as a whole, teach away from limitations recited in the independent claims. These differences are significant.

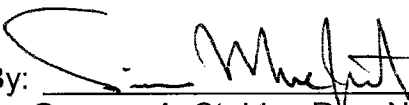
Accordingly, Applicants respectfully request the Examiner reconsider and withdraw the rejection of claims 16-20 and 36-40 under 35 U.S.C. § 103(a) in view of their dependence from allowable base claims.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action and the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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